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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,380	11/26/2003	Tae-Kon Kim	Q77929	5999

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EXAMINER	
VIANA DI PRISCO, GERMAN	

ART UNIT	PAPER NUMBER
2617	

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07/22/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,380	KIM, TAE-KON	
	Examiner	Art Unit	
	GERMAN VIANA DI PRISCO	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04/22/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al (United States Patent No.: 6,990,116 B1) in view of Benveniste (United States Patent Application Publication No.: US 2004/0002357 A1).

Consider claim 1, Young et al shows and discloses a method for increasing overall network throughput over a wireless LAN wherein the access point (AP) can

dynamically switch between distributed coordination function (DCF) and point coordination function (PCF) IEEE 802.11 access modes in response (hence after verifying) to the state of the AP buffers holding traffic to relayed (figure 6, abstract, column 8, lines 56-67, column 9, lines 1-6). Young et al further discloses that the length of the contention free period and thus the contention period can vary within the contention free period repetition interval depending on the load over the network (column 8, lines 16-19).

However Young et al does not explicitly disclose that if there is still data to be transmitted in the queue, transmit said data before entering the contention mode.

In the same field of endeavor Benveniste discloses that if there is still data to be transmitted in the queue, transmit said data before entering the contention mode (paragraph [0050]).

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made to transmit all the packets to be delivered in the queue as disclosed by Benveniste in the method of Young et al in order to improve channel utilization efficiency.

Consider claim 3, and as applied to claim 1 above, Young et al further discloses the IEEE 802.11 point coordination function (PCF) that allows a point coordinator at the access point to directly control access to the wireless medium and prevent any of the wireless stations from accessing the medium unless they are polled and given access to the medium by the access point (column 7, lines 42-52).

Consider claim 4, and as applied to claim 3 above, Young et al further discloses the IEEE 802.11 point coordination function (PCF) wherein the point coordinator at the access point controls the transmissions from all the stations by gaining control of the medium after a predetermined PCF interframe space (PIFS) at the beginning of the contention free period (column 7, lines 56-61). Young et al. further teach that the short interframe space (SIFS) has the highest priority for accessing the medium for sending acknowledgment frames (column 7, lines 64-67).

Consider claim 5, and as applied to claim 4 above, Young et al further discloses the IEEE 802.11 point coordination function (PCF) wherein the point coordinator at the access point controls the transmissions from all the stations by gaining control of the medium after a predetermined PCF interframe space (PIFS) at the beginning of the contention free period (column 7, lines 56-61). Young et al. further teach that since PIFS is shorter than DIFS, the point coordinator can gain and maintain control during the contention free period by waiting a shorter time for access to the medium that the stations which must wait for a DIFS period (column 7, line 67- column 8, line 5).

Consider claim 6, and as applied to claim 4 above, Young et al further discloses that the receiving station checks the cyclic redundancy check of the received packet and sends an acknowledgment packet to the transmitting station, and that if the transmitting station does not receive the acknowledgement packet (a predetermined period of timeout is inherently taught), it will continue to retransmit until the transmission is successful up to a given number of retransmissions (column 6, line 63 – column 7, line 3).

Consider claim 7, and as applied to claim 6 above, Young et al further discloses that the receiving station checks the cyclic redundancy check of the received packet and sends an acknowledgment packet to the transmitting station, and that if the transmitting station does not receive the acknowledgement packet (a predetermined period of timeout is inherently taught), it will continue to retransmit until the transmission is successful up to a given number of retransmissions upon which point the packets are discarded (column 6, line 63 – column 7, line 3).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al (United States Patent No.: 6,990,116 B1) in view of Benveniste (United States Patent Application Publication No.: US 2004/0002357 A1) as applied to claim 1 above, and further in view of Ekl et al (United States Patent No.: 6,898,414 B2)

Consider claim 2, and as applied to claim 1 above, Young et al as modified by Benveniste does not explicitly disclose that if no data remains in the queue, entering the contention mode.

In the same field of endeavor Ekl et al discloses entering the contention mode if no data remains in the queue (column 4, lines 23-31).

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made to enter the contention mode if no data remains in the queue as discolored by Ekl et al in the method of Young et al as modified by Benveniste in order to improve channel utilization efficiency.

Response to Arguments

5. Applicant's arguments filed 04/22/2008 have been fully considered but they are not persuasive. Applicant argues that Benveniste does not disclose transmitting data that is left in a queue before entering a contention mode. Applicant also argues that the Examiner picks and chooses technologically different portions of the cited references in an effort to satisfy the specific feature set forth in claim 1. The Examiner respectfully disagrees for the following reasons: Young teaches (in col. 8, lines 16-19) that the length of the contention-free period and thus the contention period can vary within the contention-free period repetition interval depending on the load over the network. The mechanism to achieve this is provided in the IEEE 802.11 communication standard, in which the access point can gain and maintain control of the channel during the contention-free period thanks to the shorter PCF interframe space or PIFS. Therefore Young clearly teaches that the access point can gain control of the channel and transmit data before entering a contention mode but it does not explicitly teach that the access point transmits data that is left in a queue. The Examiner has relied on Benveniste to show that the claimed feature of transmitting data that is left in a queue is well known. Benveniste teaches (see paragraph [0050]) that "Since the AP has priority over the client stations, it will recapture the channel immediately following channel release, and will transmit any remaining queued frames". This necessarily occurs before entering the contention mode because the PIFS interval occurs before the contention period starts. Furthermore both Young and Benveniste deal with the same technology, namely IEEE 802.11 compliant wireless LANs.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERMAN VIANA DI PRISCO whose telephone number is (571)270-1781. The examiner can normally be reached on Monday through Friday

7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/German Viana Di Prisco/
Examiner, Art Unit 2617
July 14, 2008

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617